CLAIMS

1. A silicon wafer for epitaxial growth, wherein the wafer is produced by slicing a silicon single crystal grown with doping nitrogen according to the Czochralski method (CZ method) in the region where at least the center of the wafer becomes V region in which the void type defects are generated and wherein the number of defects having an opening size of 20 nm or less among the void type defects appearing on a surface of the wafer is $0.02/cm^2$ or less.

2. The silicon wafer for epitaxial growth according to Claim 1, wherein the V region exists in the range of 80 % or more of a plane of the wafer.

3. The silicon wafer for epitaxial growth according to Claim 1 or 2, wherein a concentration of nitrogen doped in the silicon single crystal is 1×10^{13} to $1 \times 10^{14}/cm^3$.

4. An epitaxial wafer, wherein an epitaxial layer is formed on the surface of the silicon wafer for epitaxial growth according to any one of Claims 1 to 3.

5. The epitaxial wafer according to Claim 4, wherein the number of stacking faults (SF) appearing on the epitaxial layer is $0.02/cm^2$ or less.

6. A method for producing a silicon wafer for epitaxial growth wherein a silicon wafer for epitaxial growth is produced by growing a silicon single crystal with doping nitrogen according to the CZ method, with controlling F/G ($mm^2/min \cdot K$) in the range of 0.30 or more where F (mm/min) is a rate of crystal growth and G (K/mm) is a temperature gradient near growth interface when the silicon single crystal is grown, and with controlling a passage time (min) at 1150 to 1050 °C in the range of 40 minutes or more, in the region wherein at least the center of the wafer becomes V region in which the void type defects are generated, and then slicing the grown silicon single crystal.

7. The method for producing a silicon wafer for epitaxial growth according to Claim 6, wherein F/G is 0.35 or more when the silicon single crystal is grown.

8. The method for producing a silicon wafer for epitaxial growth according to Claim 6 or 7, wherein the silicon single crystal is grown so that the V region exists in the region of 80% or more of a plane of the wafer.

9. The method for producing a silicon wafer for epitaxial growth according to any one of Claims 6 to 8, wherein a concentration of nitrogen doped in the silicon single crystal is 1×10^{13} to $1 \times 10^{14}/cm^3$.

10. A method for producing an epitaxial wafer by forming an epitaxial layer on a surface of the silicon wafer for epitaxial growth produced by the method according to any one of Claims 6 to 9.

11. A method for producing an epitaxial wafer by forming an epitaxial layer on a surface of a silicon wafer, comprising using a silicon wafer wherein the silicon wafer is produced by slicing a silicon single crystal grown according to the CZ method with doping nitrogen in the region where at least the center of the wafer becomes V region in which the void type defects are generated and wherein the number of the defects having an opening size of 20 nm or less among the void type

defects appearing on a surface of the wafer is $0.02/cm^2$ or less.